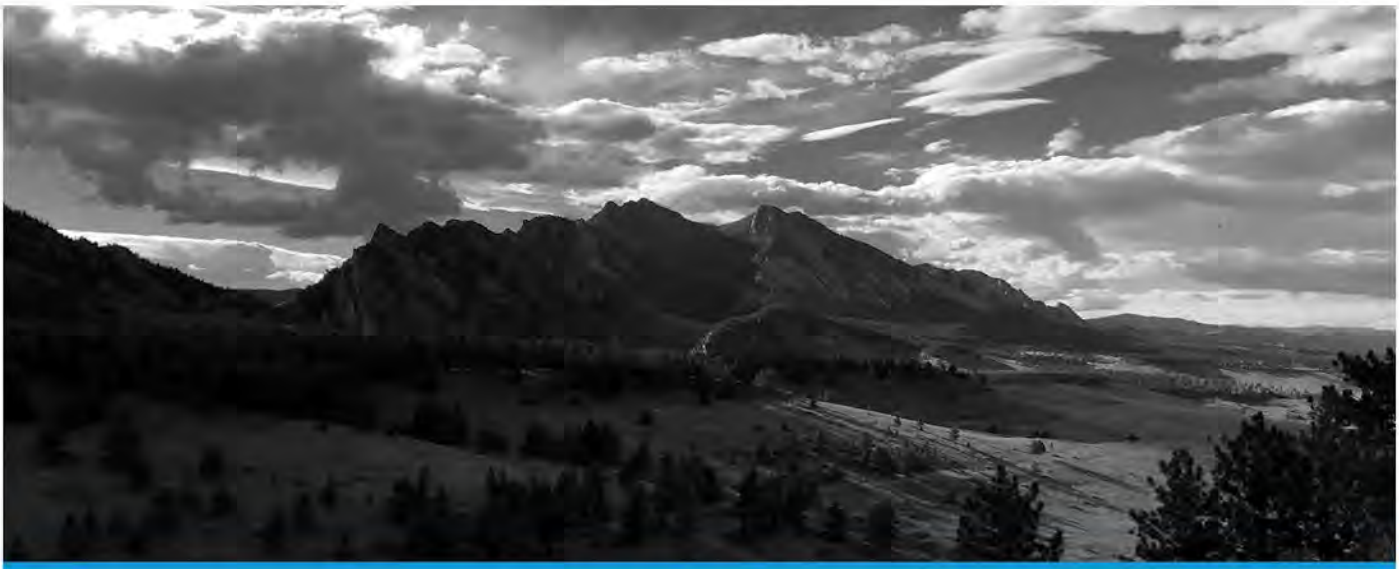
2019

N-Wave Stakeholders and Science Engagement Summit



July 9 - 11
David Skaggs Research Center
Boulder, CO

From the Campus to the Cloud

provides visibility into the many layers – campus, metro and wide area networks and associated data transfer methods – that facilitate science and data exchange at every level across NOAA.

N-Wave's Mission

N-Wave provides reliable, secure and sustainable enterprise network services to enable NOAA's mission of science, service and stewardship.

Inside:

Detailed Agenda
Speaker Lineup
WiFi Instructions

Day 1 - Tuesday, July 9

Unless otherwise noted, all events are located in the David Skaggs Research Center (DSRC) GC-402.
All listed times are in Mountain Daylight Time (MDT).

7:30 - 9:00 a.m.	**Attendee Arrival and Check-In** Please allow adequate time to pass through security at the Boulder DOC site entrance and at the front desk of the David Skaggs Research Center.  **Get Connected to Guest Wireless*** Connect to: NOAA_Guest Open a web browser Navigate to a site you have not visited before Choose *Guest or Conference Attendee* Choose *Log in with Guest or Conference Account* Username: TBA Password: TBA *NOAA_Secure and eduroam also are available for devices already configured to connect.
9:00 - 9:05 a.m.	**Welcome** *Robert Sears, N-Wave*
9:05 - 9:10 a.m.	**Introduction of Dr. Neil Jacobs** *Dr. David Fahey, Earth System Research Laboratory's Chemical Sciences Division*
9:10 - 9:40 a.m.	**NOAA's Environmental Information: Why It Matters and Future Direction** *Dr. Neil Jacobs* *Assistant Secretary of Commerce for Environmental Observation and Prediction, performing the duties of Under Secretary of Commerce for Oceans and Atmosphere* NOAA environmental information impacts every American, every day and helps foster innovation and new products that continue to improve our weather and blue economy enterprises. N-Wave is one of the most transformative IT projects that NOAA has developed and it now serves as an expanding, cost-effective nationwide network for high speed data sharing. In addition to connecting NOAA campuses and enabling collaboration with universities, N-Wave is also providing the IT backbone that is connecting smaller coastal sites around the country and supporting pilot projects to allow for data exchange between NOAA vessels at sea and land based repositories. As we look toward the future for NOAA's IT capacity, N-Wave will be an important platform that facilitates our ability to ingest and assimilate large amounts of data that will allow for the development of new tools and better collaboration across our weather, water, climate, and ecological systems.

To Top

9:40 - 10:10 a.m.	**Shared Network Infrastructures – Enabling NOAA Science and Operations** *Robert Sears, N-Wave* From the campus to the cloud, shared network infrastructures are essential to NOAA research and critical operations. Since 2010, N-Wave – NOAA's Enterprise Network – has operated a national fiber optic network backbone to deliver highly available, secure, high-speed network transport and services to support all of NOAA's missions. The N-Wave network is uniquely built on NOAA's partnerships with organizations in the scientific, research and education (SR&E) networking community. Explore how the NOAA science happening at the campus level affects the "shared roadways" across multiple network infrastructures, from the small neighborhood streets (local area networks) to the main thoroughfares (metro and regional networks) and highways (N-Wave's national backbone) that connect NOAA and its partners across the U.S.
10:10 - 10:30 a.m.	**Networking Break**
10:30 - 11:00 a.m.	**Unidata's Internet Data Distribution: A Community Driven Virtual Network** *Jeff Weber, University Corporation for Atmospheric Research* We will discuss how Unidata created a virtual network to serve the educational and research communities. Unidata partners with multiple data providers (and creates content) to deliver data and model output relevant to our communities' needs in near real time.
11:00 - 11:30 a.m.	**Radar Operations Center and NEXRAD 2020-2040** *Christina Horvat, National Weather Service Radar Operations Center* The NEXRAD Program was established when the Department of Commerce, the Department of Defense and the Department of Transportation recognized the benefits of pooling resources to accomplish an important, national goal in the late 1970s. The reason the program still exists today is to provide accurate forecasts and warnings for the protection of life and property. For NEXRAD to remain a viable program for the next 20 years, it requires ongoing operational and engineering support to integrate new technical capabilities, sustain operations and functionality, improve radar reliability, address obsolescence and maintain security.
11:30 a.m. - 12:50 p.m.	**Lunch - On Your Own** Drop by the DSRC Cafeteria or venture off site to one of Boulder's many restaurants. If you choose the latter, please allow time to return through security at the front gate of the DOC Boulder Laboratories site.
12:50 - 1:30 p.m.	**NESDIS International Satellite Data and Cloud Strategies** *Irene Parker, National Environmental Satellite, Data, and Information Service*

To Top

1:30 - 2:00 p.m.	**OMAO's Mission in the Air and at Sea** *RDML Nancy Hann, Office of Marine and Aviation Operations* RDML Hann will provide a brief overview of the Office of Marine and Aviation Operations' (OMAO) mission in the air and at sea. She will describe how Marine Operations (MO) and NOAA's Aircraft Operations Center (AOC) collect scientific data and provide emergency response services with our fleet of high-specialized aircraft and ships. Additionally, the Admiral will review the inherent technical challenges of OMAO operations and outline her vision for innovative technology aboard the new platforms coming online in the next 2-5 years.
2:00 - 2:30 p.m.	**NOAA OCIO Brief** *Zachary Goldstein, NOAA Office of the Chief Information Officer* OCIO's continued vision of shared, enterprise resources like N-Wave that support all NOAA missions and the associated need for a continued stakeholder planning process that reaches directly to program managers.
2:30 - 3:00 p.m.	**Networking Break**
3:00 - 3:30 p.m.	**Network Virtualization - Unleashing Innovation in Advanced Networks** *Jerry Sobieski, NORDUnet* What is "virtualization"? And how do we leverage virtualization in advanced networks to introduce innovation and to address the increasingly custom requirements of global science users? This talk will describe the work being done in the R&E community to develop a Generalized Virtualization Model, pilot projects and use cases.
3:30 - 4:00 p.m.	**Transporting NOAA to the Cloud: N-Wave Enterprise Cloud Transport** *Dave Mauro, N-Wave*
4:00 - 4:30 p.m.	**TIC 3.0 Security Capability Update and Scoring Model** *Chi Kang, NOAA Cyber Security Division*
4:30 - 4:50 p.m.	**Navigating the Path to IPv6 Only** *Ron Broersma, DOD Defense Research and Engineering Network (DREN)*
4:50 - 5:00 p.m.	**Discussion and Summary of Day 1 Outcomes, Takeaways and Next Steps** *Robert Sears, N-Wave*
5 - 7 p.m.	**Informal Social Gathering – Rooftop of the Rio Grande Mexican Restaurant** *No Host and No Reservation* - For menus and pricing, visit the Rio Grande website. The Rio Grande is located at 1101 Walnut Street, Boulder, CO 80302. Downtown Boulder dining includes an abundance of options nearby.

To Top

Day 2 - Wednesday, July 10

Unless otherwise noted, all events are located in the David Skaggs Research Center (DSRC) GC-402.
All listed times are in Mountain Daylight Time (MDT).

7:30 - 8:15 a.m.	**Attendee Arrival and Check-In**  **Get Connected to Guest Wireless*** Connect to: NOAA_Guest Open a web browser Navigate to a site you have not visited before Choose *Guest or Conference Attendee* Choose *Log in with Guest or Conference Account* Username: TBA Password: TBA *NOAA_Secure and eduroam also are available for devices already configured to connect.
8:15 - 8:30 a.m.	**Agenda, Logistics and Day 1 Recap** *Robert Sears, N-Wave*
8:30 - 9:00 a.m.	**NOAA Fisheries Office of the Chief Information Officer** *Roy Varghese, NOAA National Marine Fisheries Service* *Frank Amankwah, NOAA National Marine Fisheries Service* Roy Varghese will provide an overview into Fisheries OCIO: who we are, what our mission is, and where Fisheries wants to go in the future. The presentation also provides detail into Fisheries Enterprise Network Service offerings and how future state integration can help better enable the mission.
9:00 - 9:30 a.m.	**ESRL/GSD: Research Today for Better Forecasts Tomorrow** *Jennifer Mahoney, Earth System Research Laboratory / Global Systems Division* GSD's objective is to provide actionable environmental information through development and delivery of an end-to-end global convection-allowing Earth-system ensemble prediction and decision-support capability. To achieve this objective, GSD is accelerating work toward a unified stand-alone numerical modeling capability and evolvoing decision-support tools for the NWS. These activities rely on a strong foundation of advanced technologies including cloud computing, machine learning, and big-data processing and storage strategies. The presentation will describe the current and future direction of GSD's scientific activities and describe how technologies will need to advance to enable development and delivery of this end-to-end regional-to-global prediction and decision support capability.

To Top

9:30 - 10:00 a.m.	**Engagement and Performance Operations Center (EPOC) and NetSage** *Dr. Jennifer Schopf, Indiana University* The Engagement and Performance Operations Center (EPOC) works with domain scientists to accelerate the ability of distributed collaborations to share data in order to reach broader science goals. This presentation will give a brief overview of how EPOC works with researchers and will highlight the measurement and monitoring tool EPOC uses to look at how networks and archives are used, called NetSage. We will show specific examples of data movement associated with NOAA facilities and walk through several use cases.
10:00 - 10:30 a.m.	**Networking Break**
10:30 - 11:00 a.m.	**N-Wave Infrastructure Upgrades** *Mark Mutz, N-Wave*
11:00 - 11:30 a.m.	**NCEI Data Science and Stewardship — Preparing for the Exponential Growth of Environmental Data** *Dr. Stephanie Herring, NOAA's National Centers for Environmental Information* NCEI is the archive for NOAA's multi-billion dollar investment in observing, modeling and other environmental information systems. In this role, NCEI is continuously expanding its existing capacity and capabilities to support the exponential growth of data being produced by NOAA systems. This presentation will explore the changes NCEI is expecting in the near future and the evolution in data and information systems as it moves into the commercial cloud.
11:30 a.m. - 1:00 p.m.	**Lunch - On Your Own** Drop by the DSRC Cafeteria or venture off site to one of Boulder's many restaurants. If you choose the latter, please allow time to return through security at the front gate of the DOC Boulder Laboratories site.
1:00 - 1:45 p.m.	**WAN and Workflows - Enabling Science** *Matthew Link, Indiana University* Data are growing and with that growth comes complexities. Enabling science with workflows utilizing the wide area network in conjunction with performant filesystems is one way to creatively approach the data-over-distance challenge. Capturing instrument data from remote locations to a centralized filesystem and performing analysis or visualizations from geographically separated systems is just one example. This talk will showcase several examples of such approaches of using data over distance.
1:45 - 2:30 p.m.	**HPC / GFDL Brief** *Zachary Goldstein, NOAA Office of the Chief Information Officer* NOAA's High Performance Computing programs continue to grow over FY19. This trend will likely continue into FY20. With the inclusion of computing located at a cooperative university and further inclusion of cloud and other public platforms, the need for network resources is essential to the continued success of the program to

To Top

	support NOAA's mission.
2:30 - 3:00 p.m.	**Networking Break**
3:00 - 3:30 p.m.	**Globus Secure Data Transfer** *Scott Ruffner, University of Virginia* Explore using Globus High Assurance services for handling transfers of HIPAA protected data, incorporating dynamic firewall changes and additional hardening of the infrastructure for UVA's high-assurance "walled garden."
3:30 - 4:00 p.m.	**Integrated Dissemination Program** *Bernie Werwinski, National Weather Service*
4:00 - 4:30 p.m.	**Alaska Federal Agencies Networking Consortium** *Per A. Pedersen, National Weather Service Alaska Region* Traditionally, Federal agencies operate relatively independently and separately from each other. In Alaska telecommunications are very costly and that high cost can negatively impact the ability of agencies to execute their missions. The Alaska Federal Agencies Networking Consortium is the creation of a forum for Federal agencies who have operations in Alaska to explore opportunities for working together to improve networking operations and reduce costs.
4:30 - 5:00 p.m.	**Discussion and Summary of Day 2 Outcomes, Takeaways and Next Steps** *Robert Sears, N-Wave*

To Top

Day 3 - Thursday, July 11

Unless otherwise noted, all events are located in the David Skaggs Research Center (DSRC) GC-402.
All listed times are in Mountain Daylight Time (MDT).

7:30 - 8:15 a.m.	**Attendee Arrival and Check-In**  **Get Connected to Guest Wireless*** Connect to: NOAA_Guest Open a web browser Navigate to a site you have not visited before Choose *Guest or Conference Attendee* Choose *Log in with Guest or Conference Account* Username: TBA Password: TBA *NOAA_Secure and eduroam also are available for devices already configured to connect.
8:15 - 8:30 a.m.	**Agenda, Logistics and Day 2 Recap** *Robert Sears, N-Wave*
8:30 - 9:00 a.m.	**Demystifying the Science Requirements Review Process for Network Design and Use** *Jason Zurawski, ESnet* Over the last decade, the scientific community has experienced an unprecedented shift in the way research is performed and how discoveries are made. Highly sophisticated experimental instruments are creating massive datasets for diverse scientific communities and hold the potential for new insights that will have long-lasting impact on society. However, scientists cannot make effective use of this data if they are unable to move, store and analyze it, or hit unforeseen roadblocks due to the performance implications of technology they may not control or understand. To properly address the challenges of the research community in data mobility, it is necessary to communicate with the research community on common understandings and accessible solutions in this space. This talk will motivate the concept of scientific engagement, and lead into a wider discussion on strategies that can be implemented by NOAA technology staff to better understand and support scientific drivers.
9:00 - 9:30 a.m.	**Panel Discussion: NOAA Campus IT Coordinators** *Jason Zurawski, ESnet (Moderator)* *Ian Chun, NOAA Inouye Regional Center* *Alex Hsia, NOAA Boulder Network Operations Center* *Steve Martin, NOAA Western Regional Center* *Todd Schira, NESDIS / Office of Satellite and Product Operations*
9:30 - 10:00 a.m.	**Networking Break**

To Top

10:00 - 10:45 a.m.	**Update on Internet2's Next Generation Infrastructure** *Christian Todorov, Internet2*
10:45 - 11:30 a.m.	**NIST's Plans to Leverage N-Wave** *Rob Densock, NIST* The network operations team at NIST recently developed a network roadmap to address upgrades to the NIST network infrastructure that were needed by both the scientific and administrative communities. We have plans to leverage N-Wave for several of these upgrades. As general demand for Internet bandwidth increases, we plan to use NOAA's N-Wave and MTIPS services to provide more Internet bandwidth at lower prices. As we build a 100G Science network, we plan to use N-Wave to provide high-speed connectivity between our Gaithersburg and Boulder campuses to share compute and storage systems between sites. As we make heavier use of cloud service providers, we want to explore the use of N-Wave to provide direct, high-speed connectivity to a variety of CSPs. NIST also has a group of researchers stationed at the Hollings Marine Laboratory, and we want to use N-Wave to seamlessly interconnect HML with our Gaithersburg and Boulder sites.
11:30 a.m. - 12:00 p.m.	**The Center for Satellite Applications and Research (STAR)** *Matthew Jochum, NESDIS / Center for Satellite Applications and Research* The Center for Satellite Applications and Research accelerates the transfer of satellite observations of the land, atmosphere, ocean, and climate from scientific research and development into routine operations, and offers state-of-the-art data, products, and services to decision-makers. The results of this work routinely affect the everyday lives of the public through our contributions to weather forecasting, climatology, and oceanography.
12:00 p.m. - 12:30 p.m.	**ESnet Capacity Planning Techniques** *David Mitchell, ESnet* ESnet performs capacity planning and management on multiple timescales. This talk will present an overview of those processes, ranging from immediate tactical needs to long-term next-gen network planning. Short term processes include alarming on overloaded circuits and quarterly review of all circuits exceeding certain thresholds. Longer term forecasts of future network requirements are produced as well to inform the ESnet6 design. ESnet is also engaged in research efforts to study the effectiveness of Machine Learning (ML) techniques to generate short term network forecasts.
12:30 p.m.	**N-Wave Stakeholders Summit Wrap-Up and Takeaways** *Robert Sears, N-Wave* We invite your feedback! Scan the QR code or follow the link to complete the survey: https://forms.gle/Y3jLU62WomWbYgEw9

To Top

12:30 p.m. - 2:30 p.m.	**Lunch - On Your Own** Drop by the DSRC Cafeteria or venture off site to one of Boulder's many restaurants. If you choose the latter, please allow time to return through security at the front gate of the DOC Boulder Laboratories site.
2:30 - 5:00 p.m.	**Technical Breakout Sessions**

To Top

2019 Speakers

Neil Jacobs

Assistant Secretary of Commerce for Environmental Observation and Prediction, performing the duties of Under Secretary of Commerce for Oceans and Atmosphere

Dr. Neil Jacobs is the Assistant Secretary of Commerce for Environmental Observation and Prediction, performing the duties of Under Secretary of Commerce for Oceans and Atmosphere. Dr. Jacobs is responsible for the strategic direction and oversight of over $5.54 billion in annual spending, including key investments in developing a community model framework to advance U.S. weather modeling and prediction, space innovation, streamlining unmanned systems research to provide critical data across NOAA's mission areas, and unlocking the partnership potential of non-governmental and private organizations to study our nation's oceans and promote a blue economy.

Previously as the Chief Atmospheric Scientist at Panasonic Avionics Corporation, he directed the research and development of both the aviation weather observing platform and weather forecast model programs. He was previously the Chair of the American Meteorological Society's Forecast Improvement Group, and also served on the World Meteorological Organization's aircraft-based observing systems expert team.

Dr. Jacobs holds a bachelor degree in mathematics and physics from the University of South Carolina and masters and doctoral degrees in atmospheric science from North Carolina State University.

Credit: NOAA/PIFSC/HMSRP

To Top

RDML Nancy Hann

Deputy Director for Operations, NOAA Office of Marine and Aviation Operations, and Deputy Director of the NOAA Commissioned Officer Corps

Rear Admiral (Lower Half) Nancy Hann serves as the Deputy Director for Operations, NOAA Office of Marine and Aviation Operations (OMAO), and Deputy Director of the NOAA Commissioned Officer Corps. Rear Admiral Hann is responsible for the direct leadership and management of OMAO's operational assets, including the agency's fleet of 16 research and survey vessels and nine aircraft. She has served in many operational and management assignments, most recently completing tours as the commanding officer of the NOAA Aircraft Operations Center and as OMAO's Chief of Staff.

Rear Admiral Hann has served aboard NOAA aircraft as both a pilot and flight meteorologist, and has supported a variety of scientific missions and multiple unmanned aircraft missions as a pilot and project manager. Her previous experience includes serving as Executive Officer at the NOAA Marine Operations Center-Atlantic, Associate Director at the Atlantic Oceanographic and Meteorological Laboratory, and NOAA liaison to the U.S. Pacific Command. She has served aboard two NOAA ships and is a certified diver.
Rear Admiral Hann holds a master's degree in public administration from the John F. Kennedy School of Government at Harvard University, a master's degree in aeronautical science and space studies from Embry Riddle Aeronautical University and a bachelor's degree in marine science and biology from the University of San Diego.

Rear Admiral Hann has a strong record of achievement and has received numerous awards, including the NOAA Corps Meritorious Service Medal, and multiple Department of Commerce medals.

Credit: NOAA/OMAO/AOC

To Top

Frank Amankwah

Network Operations Branch Chief
NOAA National Marine Fisheries Service

Ron Broersma

Chief Engineer
DOD Defense Research and Engineering Network (DREN)

Ron Broersma serves as the Chief Engineer of the Defense Research and Engineering Network (DREN), the networking component of DoD's HPC Modernization Program, where he has served since its beginning in 1992. Since 1976, Mr. Broersma has been employed as a scientist at the Navy's R&D laboratory in San Diego, currently known as Space and Naval Warfare (SPAWAR) Systems Center, San Diego. He also has over 20 years of experience in computer and network security and serves as SPAWAR s Enterprise Network Security Manager. He is a founder of the Hawaii Intranet Consortium and also a founder of the San Diego Regional Info-Watch.

Ian Chun

IT Coordinator for the NOAA Inouye Regional Center
OCIO Service Delivery Division

Ian started with NOAA in 2005 as Program Manager at the NMFS Office of Law Enforcement. He then moved to the OCIO as IT Manager in the new campus construction project in 2007. Over the 12 years on the Inouye Regional Center campus, Ian has been providing technology services to the Pacific Region from "Layer 0 - IT Facilities and Utilities" to Desktop and Voice services.

To Top

Rob Densock

Network Operations Manager
NIST

Rob Densock is the NIST Network Operations Manager. He has been with NIST for 32 years and has specialized in helping NIST transition through several generations of network technologies to meet the growing needs of the NIST scientific and administrative communities. He is also an adjunct college instructor in networking.

Zachary Goldstein

NOAA Chief Information Officer and Director, High Performance Computing and Communications

Mr. Zachary G. Goldstein is the NOAA Chief Information Officer and Director, High Performance Computing and Communications. In this position, he is responsible for implementing statutory requirements regarding the acquisition, management and use of NOAA's information and information technology resources, to include NOAA's high performance computing and communications infrastructure. Mr. Goldstein is also responsible for NOAA's Homeland Security Program to ensure business continuity in event of a terrorist attack, major disaster or other emergency. He additionally serves as the Senior Executive responsible for the Department's use of the radio frequency spectrum. Mr. Goldstein was named NOAA CIO in January of 2015.

Mr. Goldstein joined NOAA in March 2005 as the CIO for the National Environmental Satellite, Data, and Information Service, before he was named NOAA Deputy CIO in June 2011. He has over 25 years of experience in information resource management in the federal government and private sectors. He began his career with the U.S. General Accounting Office (GAO), performing management audits of government operations and leading evaluations of federal information systems management. Mr. Goldstein served in technical management roles with BDM International, Inc., concluding as the Vice President for System Engineering and Product Development. He then returned to the federal government, appointed as Director, Logistics Systems Modernization in the Office of the Secretary of Defense. Before he joined NOAA, Mr. Goldstein was self-employed as an information technology management consultant to private and public sector organizations.

Mr. Goldstein received Bachelor of Arts and Master of Business Administration degrees from the University of Rochester, in Rochester, New York.

To Top

Stephanie Herring

Scientist and Senior Advisor
NOAA's National Centers for Environmental Information

Stephanie C. Herring is a scientist and senior advisor with NOAA's National Centers for Environmental Information (formerly the National Climatic Data Center) in Boulder, Colorado. She is currently the Acting Geophysical Sciences Branch Chief, which covers marine geology and geophysics, and solar terrestrial physics. She also has a background in climate data and services, as well as climate change and extreme events. For the past six years she has been the Lead Editor for the annual Bulletin of the American Meteorological Society report, *Explaining Extreme Events from a Climate Perspective* which is aimed at understanding the physical drivers behind extremes and how risk exposure to extremes events is changing over time. She is also the current chair of the AMS Board on Global Strategies, and former chair of the AMS Climate Services Committee where she supports AMS interests in promoting growth across the private sector climate solution provider enterprise.

Prior to her current position at the National Centers for Environmental Information, she served as the Senior Climate Advisor for NOAA's Deputy Under Secretary for Operations in Washington D.C. Before coming to NOAA, she served as a Congressional staff member as an American Association for the Advancement of Science and American Chemical Society Congressional Policy Fellow. She completed postdoctoral research at the National Institutes of Health, holds a doctorate from Yale University, and a B.A. from Swarthmore College.

Christina Horvat

Engineering Branch Chief
NWS / Office of Observations / Radar Operations Center

Christina Horvat is the Chief of the Engineering Branch for the NEXRAD Radar Operations Center. In this role, she is responsible for a staff of highly specialized engineers, meteorologists and computer scientists who perform systems modifications to sustain NEXRAD life cycle requirements. Her Branch improves radar reliability, addresses obsolescence and integrates new technical capabilities for 167 Doppler weather radars deployed throughout the United States and overseas. These radars support national severe weather and flash flood warnings, air traffic safety and flow control, resource protection at military bases, and management of water, agriculture, forest, and snow removal.

To Top

Alex Hsia

Lead Network Engineer
NOAA Boulder Network Operations Center

With over twenty years of experience in networking, Alex supports the entire Department of Commerce (DoC) campus in Boulder that houses laboratories for the National Institute of Standards and Technology (NIST) and the National Telecommunications and Information Administration (NTIA), as well as NOAA. Before joining NOAA, Alex was a captain in the Air Force working as an Aeronautical Engineer at Wright Patterson AFB. He has participated in many metro and regional networking activities, including the Boulder Research and Administrative Network (BRAN), the Bi-State Optical Network (BiSON), the Front Range GigaPoP (FRGP) and the Western Regional Network (WRN). Alex was also instrumental in getting NOAA connected to Internet2. Alex is transitioning to a Research and Developmental network engineer/architect role in the Networking Innovative Center of Excellence (NICE).

Matthew Jochum

Information System Security Officer and Network Administrator
NESDIS / Center for Satellite Applications and Research (STAR)

Like most employees in NOAA, Matthew Jochum wears many hats, capes and boots, depending on the day. He started in STAR, née ORA, as a Unix Sys-Admin in 1997, added Cisco network administration in 2004 and then was designated the ISSO[1] in 2006. In addition to his work experience, Matthew earned a Certified Information Systems Security Professional (CISSP) and a B.S. from the University of Maryland in Computer Information Systems (CMIS). This diversity allows him to currently work intimately on a number of high-profile projects including the near-real-time GOES Imagery website[2], the NESDIS Secure Ingest Pilot[3], the NOAA Commercial Weather Data Pilot and the NESDIS Cloud Project. Outside of the office, Matthew has a family, a bunch of kids and a few cats (not the neurotic kind), and tries to run a small business.

Footnotes:

1. 2016 Department of Commerce Outstanding Information Technology and Engineering Employees of the Year
2. 2017 Department of Commerce Outstanding Information Technology and Engineering Employees of the Year
3. 2018 Department of Commerce Outstanding Information Technology and Engineering Employees of the Year and 2019 Department of Commerce Bronze Medal

---

To Top

Chi Kang

Deputy Director for Operations
NOAA Cyber Security Division

Chi Kang joined NOAA family with the Service Delivery Division (SDD) in 2001 where he operationalized the NOAA Webfarm providing fully redundant and geographically diverse infrastructure to serve critical weather data, supporting Primary Mission Essential Functions (PMEF) such as the National Hurricane Center and Storm Prediction Center. NOAA Webfarm played a vital role in disseminating watches and warnings during major weather events such as Hurricane Katrina. While supporting SDD, he was recognized with Bronze Medal and Distinguished Career Awards in development of the NOAA Operational Model Archive Distribution System (NOMADS), the first operational US climate and weather model archive.

In 2010, GCN's Government Innovation Awards recognized NOAA for leveraging the Environmental Response Management Application (ERMA), a Web-based geospatial tool designed to support interagency data sharing and syndication data feeds during the Deepwater Horizon Crisis, where an undersea oil well sent millions of gallons of oil spewing from the floor of the Gulf of Mexico. Chi Kang architected a complex set of infrastructure to support the open-source ERMA application, which uses Google Maps for its map layers, and was expanded to accommodate the 600 different data layers.

In 2015, Chi Kang transitioned to NOAA Cyber Security Division and is currently serving as the program manager for NOAA's Trusted Internet Connection (TICAP) and the NOAA Cyber Security Center (NCSC). He was recognized for improving the TICAP security posture and multi-agency security controls, which not only resulted in an impressive rating of greater than 98% in a DHS evaluation, but also represents cost savings and improved overall security opportunities for other DOC bureaus.

Matthew Link

Associate Vice President, Research Technologies
University Information Technology Services
Indiana University

Matt Link is the associate vice president for UITS Research Technologies and a center director for the Pervasive Technology Institute. Link has been with IU and UITS for more than 20 years and has worked at all levels of the organization. He has a wide range of experience in higher education technologies from supporting faculty to managing large unix systems, storage environments, and high performance computing. His current role overseeing Research Technologies includes high performance computing, data storage, visualization, and research collaborations.

To Top

Jennifer Mahoney

Acting Director
Earth System Research Laboratory / Global Systems Division

Jennifer Mahoney is serving as the Acting Director of the Earth System Research Laboratory/Global Systems Division (ESRL/GSD) where she leads a talented group of scientists and engineers in research today for better forecasts tomorrow. Prior to becoming the Acting Director, Jennifer was the Deputy Director of the Earth System Research Laboratory/Global Systems Division (ESRL/GSD) for five years. Among her many accomplishments while in this position, she transformed and strengthened relationships with the National Weather Service and the Federal Aviation Administration (FAA) to better align scientific research goals with operational objectives. She oversaw improvements in administration functions, program management, and budget planning. She was instrumental in leading change within the Laboratory resulting in well-defined scientific grand challenges to meet NOAA's mission.

Prior to 2013, Jennifer was Chief for GSD's Forecast Impact and Quality Assessment Section as well as the Lead for the FAA Aviation Weather Research Program's Quality Assessment Product Development Team. During this period, Jennifer led a multidisciplinary team of scientists to streamline the transition of aviation research into NWS operations and ensure that newly-develop weather products were of high quality. She also developed automated decision-support systems targeted for transition to NWS and FAA operations. Previously, she worked as a research meteorologist and had early experience as an intern working in a NWS Forecast Office. In 2017 and 2003 Jennifer received the NOAA Research Employee of the Year for her Leadership.

Jennifer holds a Master's degree in Atmospheric Science from Colorado State University and a Bachelor of Arts Degree in Meteorology with an emphasis in math from the University of Northern Colorado. Jennifer is a member of the American Meteorological Society (AMS), a Fellow of the Cooperative Institute for Research in the Atmosphere, OAR's representative on the Joint Center for Satellite Data Assimilation Management Oversight Board, and serves on the AMS Board for Environmental Information Processing Techniques.

Steve Martin

IT Coordinator for the Western Regional Center
NOAA OCIO / Service Delivery Division

Steve Martin began his federal career in the USDA Forest Service in 1993. He moved to the NMFS Office for Law Enforcement (OLE) in 1998 as the IT Specialist for the Alaska Enforcement Division. IT support, database support and development, including the Vessel Monitoring System (VMS), and computer forensics were his primary duties. Steve moved to the Northwest Division of Law Enforcement in 2005 with similar duties. In 2008, he was hired as the Datacenter Manager for the NMFS Office for Law Enforcement and managed the IT infrastructure for OLE and

To Top

VMS. In 2012, OLE IT was merged into NMFS's Office of the CIO, and Steve's primary duty became the VMS IT manager and IT liaison for NMFS OLE and OCIO.

Dave Mauro

Solutions Architect
OCIO / SDD / N-Wave

Dave Mauro is an N-Wave solutions architect focusing on customer engagement and planning. He has worked on service provider, large enterprise and government networks in a variety of consultative and engineering roles. Dave is the owner of Govadapt, a networking and cloud consultancy that provides professional services to NOAA.

David Mitchell

NOC Group Lead (Acting)
Energy Sciences Network (ESnet)

David Mitchell works for ESnet, the Energy Sciences Network. Currently he is the acting group lead for the ESnet NOC and a member of the Network Engineering group. David has over 20 years of experience in the R&E networking community. He has been with ESnet for over five years, with previous tenures at the National Center for Atmospheric Research (NCAR) and the National Center for Supercomputing Applications (NCSA).

Mark Mutz

Transport Operations Manager
OCIO / SDD / N-Wave

Irene Parker

Assistant Chief Information Officer-Satellites
National Environmental Satellite, Data, and Information Service (NESDIS)

To Top

Per A. Pedersen

Branch Chief
NWS Alaska Region / Office of Dissemination

With a background in Software Engineering, Per A. Pedersen has 25 years of experience with software development, managing computers and computer networks, electronics systems and facilities in the Alaska Region of the National Weather Service. Recently he has been involved in a variety of large scale IT projects for NWS and the Alaska Region. Modernizing communications backup for NWS, improving IT support for the Tsunami Warning Centers and building out networking in Alaska are a few of the presently ongoing projects.

Scott Ruffner

HPC Engineering Director
University of Virginia

Todd Schira

Telecommunications Manager
NOAA Office of Satellite and Product Operations

To Top

Jennifer Schopf

Director, Engagement and Performance Operations Center
Director, International Networks
Indiana University

Dr. Jennifer M. Schopf is the Director of International Networks at Indiana University (IN@IU) and also the Director of the Engagement and Performance Operations Center (EPOC). Schopf leads a $4M per year program supporting both US domestic and international science engagement to improve research outcomes. Internationally, this includes assisting the use of transoceanic networks to Europe, Africa, and Asia, with a focus on measurement, monitoring, and advocacy for end-users. Prior to IU, she was a program officer at the US National Science Foundation (NSF), a founding member of the Woods Hole Oceanographic Institution's Ocean Informatics team, and a senior member of the Globus distributed software team. Her research focuses on end-to-end performance prediction and user requirements gathering, primarily in distributed systems with relation to large-scale data use.

Robert Sears

N-Wave Branch Chief
NOAA OCIO / Service Delivery Division / N-Wave

Robert Sears is the branch chief for N-Wave, NOAA's Enterprise Network. N-Wave operates within the NOAA Office of the Chief Information Officer to align and execute on NOAA's strategic plan for network transport and optimization. It offers a diverse portfolio of enterprise networking services, including a NOAA operated and managed national and international wide area network, NOAA Trusted Internet Connection Access Points, and multiple nation-wide NOAA campus networks. Through these services, N-Wave supports critical operations and research missions, enabling NOAA's mission of science, stewardship and service through highly available, secure, high-speed network transport and services.

To Top

Jerry Sobieski

Chief Research Officer
NORDUnet

Jerry Sobieski is the Chief Research Officer for NORDUnet – the Nordic Universities Network – serving the research and science community in the Nordic countries of northern Europe. He has worked extensively over the last 30 years with the US and International R&E networking community in roles with GENI and FIRE network research programs, the GEANT Project in Europe, the Mid-Atlantic Crossroads, Internet2, and the University of Maryland Institute for Advanced Computer Studies. Over the last three years he has been leading the Network Services Development team in the GEANT Project (in Europe) delivering virtualized network services.

Roy Varghese

Assistant Chief Information Officer (ACIO)
NOAA National Marine Fisheries Service

Roy Varghese serves as the Assistant Chief Information Officer (ACIO) for the National Oceanic & Atmospheric Administration National Marine Fisheries Service (NOAA Fisheries). In this capacity, Roy is responsible for providing strategic vision and leadership in the design, development, and delivery of digital products and services that support the 4,200 NOAA Fisheries staff including scientists, policy managers, and law enforcement officers located across the country, and at the national headquarters in Silver Spring, Maryland. Since assuming the ACIO position at NOAA Fisheries in November 2017, Roy has implemented policies that increase the pace of IT modernization; designed a maturity assessment approach to identify and improve cybersecurity posture; and collaborated with stakeholders to execute a digital strategy that included modernizing Fisheries' web presence and deploying next generation application platforms.

Jeff Weber

Unidata Program Center Project Manager
University Corporation for Atmospheric Research

Jeff Weber has been at UCAR/Unidata since 1998. He has helped maintain the Internet Data Distribution (IDD), a virtual network for universities and research organizations, for the past 20 years. This network collects a wide array of atmospheric datasets and model output for real time dissemination. Jeff also works with cloud implementations of the Unidata software stack, and three dimensional visualizations.

To Top

Bernie Werwinski

Chief, Network and Infrastructure Branch
National Weather Service Office of Dissemination

Jason Zurawski

Science Engagement Engineer
Lawrence Berkeley National Laboratory / Energy Sciences Network (ESnet)

Jason Zurawski is a Science Engagement Engineer at the Energy Sciences Network (ESnet) in the Scientific Networking Division of the Computing Sciences Directorate of Lawrence Berkeley National Laboratory. ESnet is the high performance networking facility of the US Department of Energy Office of Science. Jason's primary responsibilities include working with members of the research community to identify the role of networking in scientific workflows, evaluate current requirements, and suggest improvements for future innovations. Jason has a B.S. in Computer Science & Engineering from The Pennsylvania State University, and an M.S. in Computer and Information Science from The University of Delaware.

To Top